

AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions of the claims.

1-80. (Cancelled)

81. (Previously presented) A soluble single-chain T cell receptor fusion molecule comprising a T cell receptor and a cytokine or fragment thereof connected by a first peptide linker, wherein the soluble single-chain T cell receptor has one recognition binding site and the cytokine or fragment thereof has a different recognition binding site, wherein the soluble single-chain T cell receptor comprises α and β variable chain TCR covalently linked together by a second peptide linker β chain.

82. (Previously presented) The soluble T cell receptor fusion molecule of claim 81 wherein the T cell receptor is specific for recognition of a particular antigen.

83. (Cancelled)

84. (Withdrawn) The soluble T cell receptor fusion molecule of claim 81 wherein the T cell receptor α and β chains are linked through a non-covalent linkage.

85. (Previously presented) The soluble T cell receptor fusion molecule of claim 81 wherein the T cell receptor comprises a single chain T cell receptor polypeptide.

86. (Previously presented) The soluble T cell receptor fusion molecule of claim 81 wherein the cytokine or fragment thereof is specific for recognition of an effector cell.

87. (Withdrawn) The soluble T cell receptor fusion molecule of claim 81 wherein the biologically active polypeptide comprises an immunoglobulin domain or fragment thereof.

88. (Withdrawn) The soluble T cell receptor fusion molecule of claim 87 wherein the soluble T cell fusion molecule comprises a first kappa constant light chain immunoglobulin domain or fragment thereof.

89. (Withdrawn) The soluble T cell receptor fusion molecule of claim 88, wherein the soluble T cell fusion molecule further comprises a first immunoglobulin heavy chain constant domain or fragment thereof covalently linked to the molecule.

90. (Withdrawn) The soluble T cell receptor fusion molecule of claim 89, wherein the soluble T cell receptor fusion molecule further comprises a second immunoglobulin heavy chain constant domain or fragment covalently linked to the first immunoglobulin heavy chain constant domain or fragment.

91. (Withdrawn) The soluble T cell receptor fusion molecule of claim 90, wherein the soluble T cell receptor fusion molecule further comprises a second kappa light constant immunoglobulin chain domain or fragment thereof.

92. (Withdrawn) The soluble T cell receptor fusion molecule of claim 87, wherein the soluble T cell receptor molecule comprises a first immunoglobulin heavy chain constant domain or fragment thereof covalently linked to the molecule.

93. (Withdrawn) The soluble T cell receptor fusion molecule of claim 92, wherein the biologically active polypeptide comprises a first kappa light chain constant immunoglobulin domain or fragment thereof.

94. (Withdrawn) The soluble T cell receptor fusion molecule of claim 93, wherein the molecule further comprises a second immunoglobulin heavy chain constant domain or fragment covalently linked to the first immunoglobulin heavy chain constant domain or fragment.

95. (Withdrawn) The soluble T cell receptor fusion molecule of claim 94, wherein the molecule further comprises a second kappa light constant chain immunoglobulin domain or fragment thereof.

96. (Withdrawn) A chimeric molecule comprising, on a first chain, a first soluble T cell receptor fusion molecule covalently linked to an immunoglobulin heavy chain constant domain or fragment thereof; and, on a second chain covalently linked to the first chain, an immunoglobulin heavy chain or fragment thereof.

97. (Withdrawn) The chimeric molecule of claim 96, wherein the first chain is non-covalently linked to a first kappa constant light chain immunoglobulin domain or fragment thereof.

98. (Withdrawn) The chimeric molecule of claim 97, wherein the second chain is non-covalently linked to a second kappa light chain constant domain or fragment thereof.

99. (Withdrawn) The chimeric molecule of 96, wherein the immunoglobulin heavy chain or fragment of the second chain is covalently linked to a second soluble T cell receptor fusion molecule.

100. (Withdrawn) A chimeric bispecific molecule comprising a first chain and a second chain, wherein the first chain comprises covalently linked in sequence a soluble T cell receptor fusion molecule and an immunoglobulin heavy chain constant domain or fragment; and the second chain comprises an immunoglobulin heavy chain or fragment thereof, the first and second chains being non-covalently linked, respectively, to a first immunoglobulin kappa constant light chain domain or fragment thereof, and a second immunoglobulin kappa constant light chain domain or fragment thereof.

101. (Canceled)

102. (Previously presented) The soluble T cell receptor fusion molecule of claim 81 wherein the biologically active polypeptide comprises an IL-2 cytokine or a fragment thereof.

103. (Withdrawn) The soluble T cell receptor fusion molecule of claim 81 wherein the biologically active polypeptide comprises an IL-10 cytokine or a fragment thereof.

104. (Withdrawn) The soluble T cell receptor fusion molecule of claim 81 wherein the biologically active polypeptide comprises a chemokine or a fragment thereof.

105. (Withdrawn) The soluble T cell receptor fusion molecule of claim 81 wherein the biologically active polypeptide comprises a growth factor or a fragment thereof.

106. (Withdrawn) The soluble T cell receptor fusion molecule of claim 81 wherein the biologically active polypeptide comprises GCSF or a fragment thereof.

107. (Withdrawn) The soluble T cell receptor fusion molecule of claim 81 wherein the biologically active polypeptide comprises GMCSF or a fragment thereof.

108. (Withdrawn) The soluble T cell receptor fusion molecule of claim 81 wherein the biologically active polypeptide comprises a protein toxin domain or a fragment thereof.

109. (Withdrawn) A method of preparing a soluble T cell receptor fusion molecule, the method comprising:

providing a T cell receptor chain, or subfragment thereof;

providing a biologically active polypeptide corresponding to a second chain, or subfragment thereof;

connecting the T cell receptor chain and the second chain to a peptide linker; and

recovering the linked T cell receptor fusion polypeptide molecule, thereby generating a T cell receptor fusion molecule.

110. (Withdrawn) A soluble T cell receptor conjugate molecule comprising a plurality of biologically active molecules covalently bound to a carrier, the carrier being covalently bound to a portion of a T cell receptor, wherein the resulting conjugate is soluble.

111. (Withdrawn) The soluble T cell receptor conjugate molecule of claim 110 wherein the T cell receptor is specific for recognition of a particular antigen.

112. (Withdrawn) The soluble T cell receptor conjugate molecule of claim 110 wherein the T cell receptor is a heterodimer comprising α and β chain TCR.

113. (Withdrawn) The soluble T cell receptor conjugate molecule of claim 110 wherein the T cell receptor α and β chains are linked through a non-covalent linkage.

114. (Withdrawn) The soluble T cell receptor conjugate molecule of claim 110 wherein the T cell receptor is a single chain T cell receptor.

115. (Withdrawn) The soluble T cell receptor conjugate molecule of claim 110 wherein the biologically active molecule is a cytotoxic molecule.

116. (Withdrawn) The soluble T cell receptor conjugate molecule of claim 110 wherein the biologically active molecule is a toxin.

117. (Withdrawn) The soluble T cell receptor conjugate molecule of claim 110 wherein the biologically active molecule is a chemotherapeutic agent.

118. (Withdrawn) The soluble T cell receptor conjugate molecule of claim 110 wherein the biologically active molecule is an anti-cancer drug.

119. (Withdrawn) The soluble T cell receptor conjugate molecule of claim 110 wherein the biologically active molecule is a detectable label.

120. (Withdrawn) The soluble T cell receptor conjugate molecule of claim 110 wherein the biologically active molecule is a fluorescent compound or an electron transfer agent.

121. (Withdrawn) The soluble T cell receptor conjugate molecule of claim 110 wherein the biologically active molecule is an enzyme.

122. (Withdrawn) The soluble T cell receptor conjugate molecule of claim 110 wherein the biologically active molecule is a radioactive compound.

123. (Withdrawn) A method of preparing a soluble T cell receptor conjugate molecule comprising:

reacting a polymer carrier which has covalently bound a plurality of biologically active molecules with a T cell receptor chain; and

reductively stabilizing the resulting conjugate molecule, wherein the resultant conjugate T cell receptor molecule is soluble.

124. (Previously presented) A therapeutic composition for treatment of disorders comprising a therapeutically effective amount of the T cell receptor fusion molecule of claim 81 and a sterile, pharmaceutically acceptable carrier vehicle.

125. (Withdrawn) A therapeutic composition for treatment of disorders comprising a therapeutically effective amount of the T cell receptor conjugate molecule of claim 110 and a sterile, pharmaceutically acceptable carrier vehicle.

126-146. (Cancelled)

147. (Previously Presented) The soluble single-chain T cell receptor fusion molecule of claim 81, wherein at least one of the first and second peptide linkers includes from about 7 to 20 amino acids.

148. (Previously Presented) The soluble single-chain T cell receptor fusion molecule of claim 147, wherein the first and second peptide linkers includes from about 8 to 16 amino acids.

149. (Previously Presented) The soluble single-chain T cell receptor fusion molecule of claim 148, wherein at least one of the first and second peptide linkers consist of alanine, serine and glycine to provide for flexibility.

150. (Previously presented) A therapeutic composition for treatment of disorders comprising a therapeutically effective amount of the T cell receptor fusion molecule of any one of claims 147-149 and 151-152 and a sterile, pharmaceutically acceptable carrier vehicle.

151. (Previously presented) The soluble single-chain T cell receptor fusion molecule of claim 81, wherein at least one of the first and second peptide linkers consists of about 7 to 20 amino acids.

152. (Previously presented) The soluble single-chain T cell receptor fusion molecule of claim 147, wherein the first and second peptide linkers consist of about 8 to 16 amino acids.

153. (Previously presented) A soluble single-chain T cell receptor fusion molecule comprising a T cell receptor and a cytokine or fragment thereof connected by a peptide linker, wherein the soluble single-chain T cell receptor has one recognition binding site and the cytokine or fragment thereof has a different recognition binding site, wherein the soluble single-chain T cell receptor comprises α and β variable chain TCR.

154. (Withdrawn) The soluble single-chain T cell receptor fusion molecule of claim 81, wherein the soluble single-chain T cell receptor further comprises a β constant domain covalently linked to the β variable chain.

155. (Withdrawn) The soluble single chain T cell receptor fusion molecule of claim 154, wherein the fusion molecule comprises a sequence of covalently linked subunits comprising the sequence: (NH₂)-TCR-V α -- second peptide linker—TCR-V β —TCR-C β —first peptide linker—cytokine or fragment thereof.

156. (Withdrawn) The soluble T cell receptor fusion molecule of claim 155, wherein the cytokine or active fragment thereof comprises an IL-2 cytokine or a fragment thereof.